

LIBERATING THE IDE

WEB BASED DOMAIN SPECIFIC LANGUAGE IDE

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WHO ARE WE?



- › Eclipse Tool Developers
 - Enabling model driven O&M solutions



OUR MISSION



As a Yang Modeler

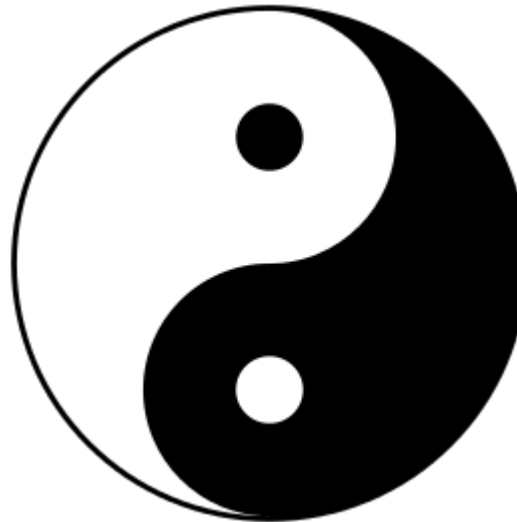
I want to use an easily bootstrapped IDE including a state of the art editor that validates Yang models according to IETF YANG RFC and Ericsson Yang Design Rules

so that Yang models are assured to be correct and accepted by the runtime system

IETF YANG



- › YANG is a data modeling language used to model configuration and state data manipulated by the Network Configuration Protocol (NETCONF)



YANG EXAMPLE



```
module acme-system {  
    namespace "http://acme.example.com/system";  
    prefix "acme";  
    //...  
    container system {  
        leaf host-name {  
            type string;  
            description "Hostname for this system";  
        }  
        //...  
    }  
}
```

IDE WANTED FEATURES



Fast set-up anywhere

DSL Aware Editor

Workspaces

Integrated Version
Control

Extendable

XTEXT



- › Xtext is a framework for development of programming languages and domain-specific languages
- › Generating a full infrastructure
 - including **parser**, **linker**, **typechecker**, **compiler** as well as editing
- › Support for **Eclipse**, **IntelliJ**



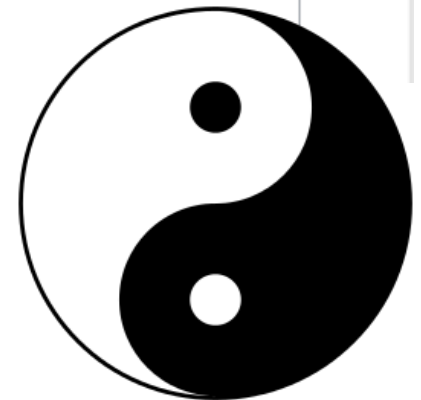
YANG GRAMMAR



```
grammar com.ericsson.yang.Yang hidden(WS, ML_COMMENT, SL_COMMENT)
import "http://www.ericsson.com/2010/Yang" as yang
import "http://www.eclipse.org/emf/2002/Ecore" as ecore

AbstractModule returns yang::AbstractModule:
» Module
» SubModule
;

Module returns yang::Module:
» 'module' name=OptionallyQuotedName '{' (
» » // module-header-stmts
» » (- 'yang-version' yangVersionList+=(OptionallyQuotedString) ';' )- // Only 1.1
» » | 'namespace' namespaceList+=(ConcatenatedString|QuotedConcatenatedString) ';'
» » | (- prefixList+=Prefix )
» » // linkage-stmts
» » | (- imports+=Import )
```



ECLIPSE YANG IDE



The screenshot displays the Eclipse Yang IDE interface. The **Project Explorer** on the left shows a project named **eyang-repository** containing various YANG files, with **ericsson-entity.yang** selected. The **Editor** in the center shows the content of **ericsson-entity.yang**, featuring YANG code with syntax highlighting. The **Outline** view on the right shows the hierarchical structure of the **ericsson-entity** model, including **entity-provision-state**, **ent:entity-state**, and **ent:physical-entity**. The **Properties** view at the bottom displays metadata for the selected file, including Yang Version, Namespace, Prefix, Organization, and Contact.

```
133 .....type entity-provision-state;
134 .....description "Provisioning state of the entity";
135 .....}
136
137 .....}
138
139 .....augment "/ent:entity-state/ent:physical-entity" {
140 .....when "ent:class = 'ex-ent-id:rack'";
141 .....description "Additions to physical entities of type rack";
142 .....}
143 .....container rack {
144 .....must "not(@../contains-child) || (../contains-child.class = 'st
145 .....//must "../contains-child.class = 'chassis'";
146 .....description "rack properties";
147 .....}
148 .....leaf visible-alarm {
149 .....type boolean;
150 .....description "Entity supports visible alarm";
151 .....}
152
```

ericsson-entity - eyang-repository

Resource	Yang Version: 1.1
Meta-data	Namespace: urn:rdns.com:ericsson:oammodel:ericsson-entity
Revisions	Prefix: ente
Relations	Organization: Ericsson
	Contact: Balazs Lengyel

CUMBERSOME SETUP



CURRENT STATE



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Xtext

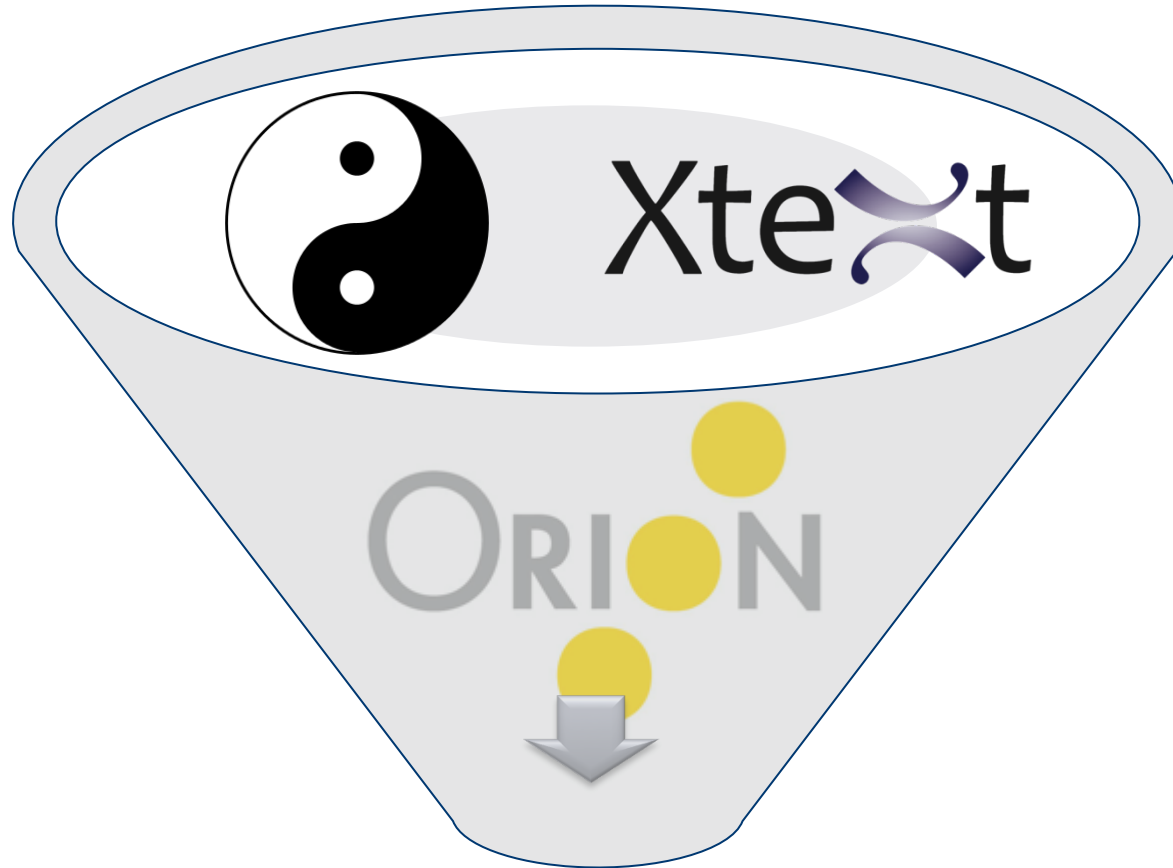
GET STARTED QUICKLY



Time available for innovation.

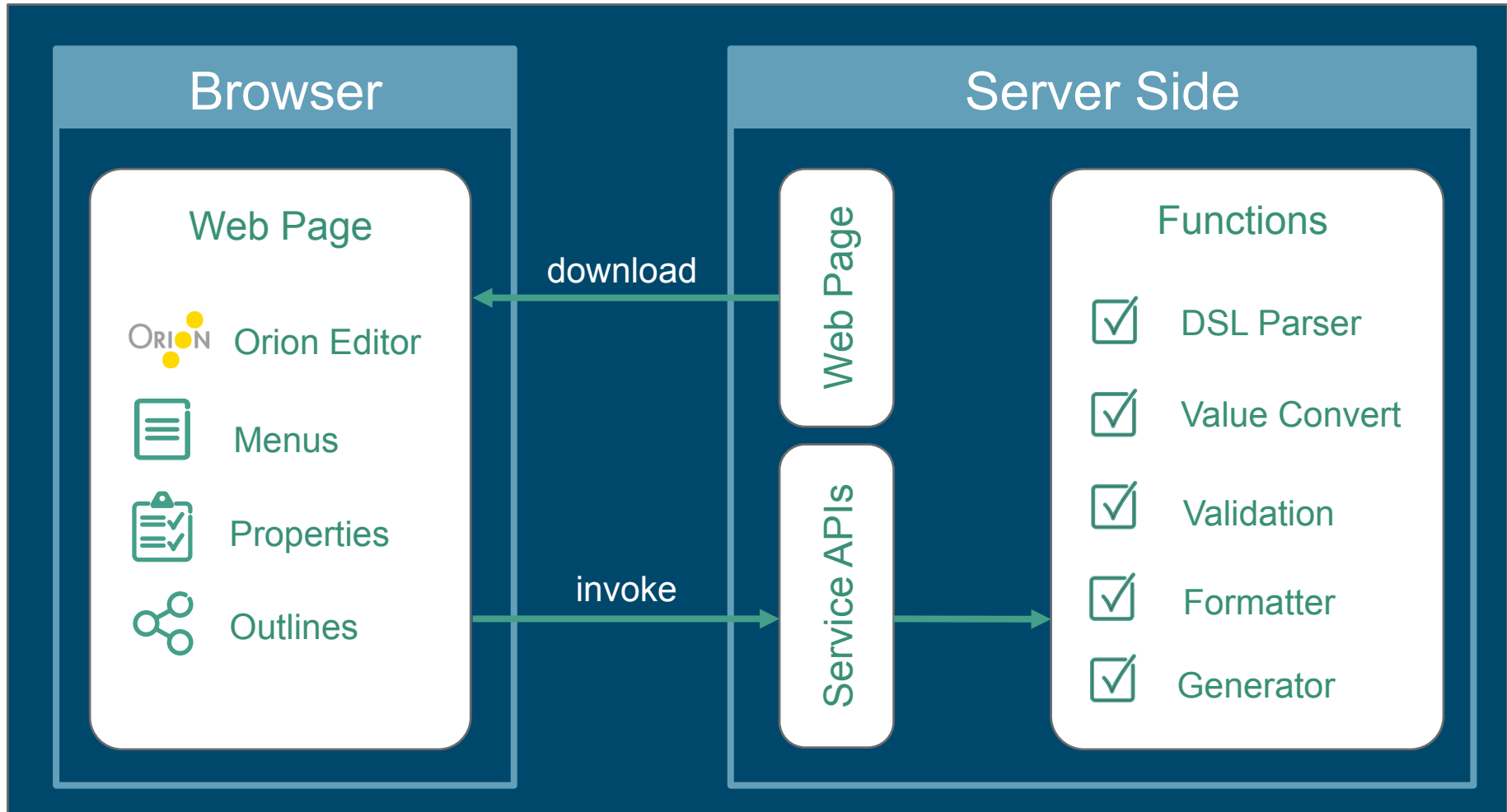


FIRST ATTEMPT



Yang Web Editor!

WEB EDITOR FRAMEWORK



YANG WEB EDITOR



Yang Web Workbench

147.214.115.213:9527/yang-web-editor/yang-web-workbench.html

ERICSSON\eyuwehu Sign Out

Project View

- Default Project
 - ericsson-brm.yang
 - ericsson-cli-server.yang
 - ericsson-file-m.yang
 - ericsson-fm.yang
 - ericsson-ftp-server.yang
 - ericsson-lm.yang
 - ericsson-logm.yang
 - ericsson-netconf-server-ext.yang
 - ericsson-pm.yang
 - ericsson-pmevent-m.yang
 - ericsson-sntp-ext.yang
 - ericsson-sub-equip-trace-m.yang
 - ericsson-subequiptracem.yang
 - ericsson-swim.yang
 - ericsson-swm.yang
 - ericsson-system-ext.yang
 - ericsson-yang-extensions.yang

*** ericsson-brm.yang**

```
1 /*
2 Copyright (c) 2016 Ericsson AB.
3 All rights reserved
4 DX ECIM Tool-chain generated this file on May 24, 2016 3:39:17 PM using
5 * com.ericsson.ecim.yang.m2m 3.2.0.qualifier
6 */
7 module ericsson-brm {
8   yang-version "1.1";
9   namespace urn:rdns:com:ericsson:oammodel:ericsson-brm;
10  prefix brme;
11  import ericsson-yang-extensions {
12    prefix yexte;
13  }
14  }
15  }
16  }
17  }
18  }
19  }
20  }
21  }
22  }
23  }
24  }
25  }
26  }
27  }
28  }
29  }
30  }
31  }
```

ericsson-brm

- ericsson-yang-extensions
- yexte
- ericsson-yang-types
- ietf-yang-types
- ietf-inet-types
- 2016-05-24
- brm
- is-system-created

brme

Recommended Contact is missing from the module description

Don't use 'ordered-by' statement with the default meaning (system)

Enum name should be less than 20 characters

RFC 6087

Description	Resource	Path	Location (Line)	Type
Recommended Contact is missing from the module description	ericsson-brm.yang		28	warning
Don't use 'ordered-by' statement with the default meaning (system)	ericsson-brm.yang		659	warning
Enum name should be less than 20 characters	ericsson-brm.yang		831	warning
RFC 6087	ericsson-brm.yang		33	error

Search took 0 sec

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WEB EDITOR SCORE



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Extendable

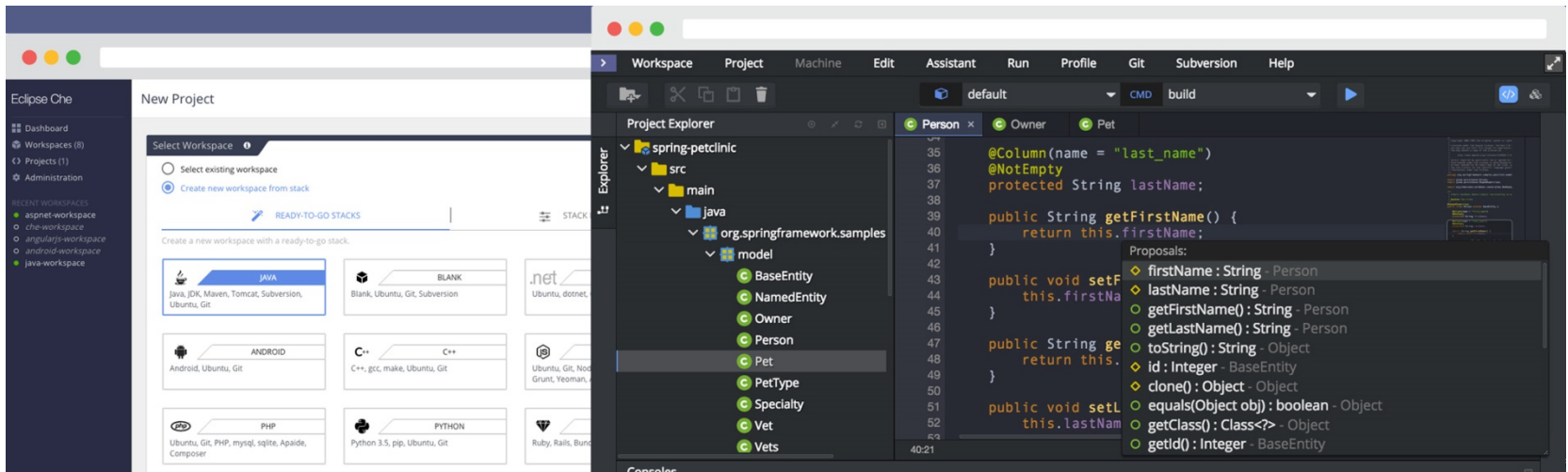
Xtext



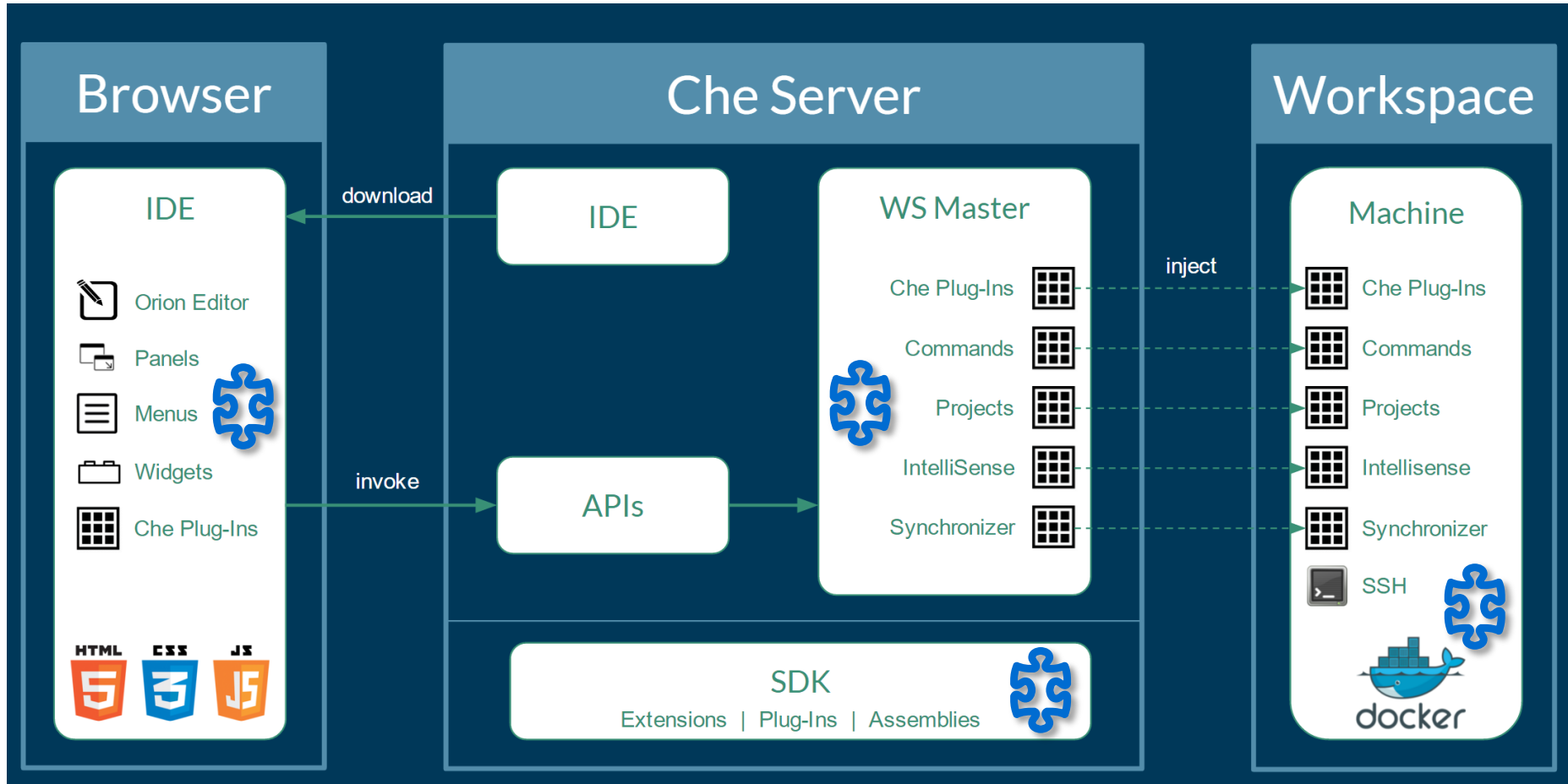
CHE: A CLOUD-BASED IDE



“Eclipse Che is an IDE and developer workspace server that allows anyone to contribute to a project without having to install software”

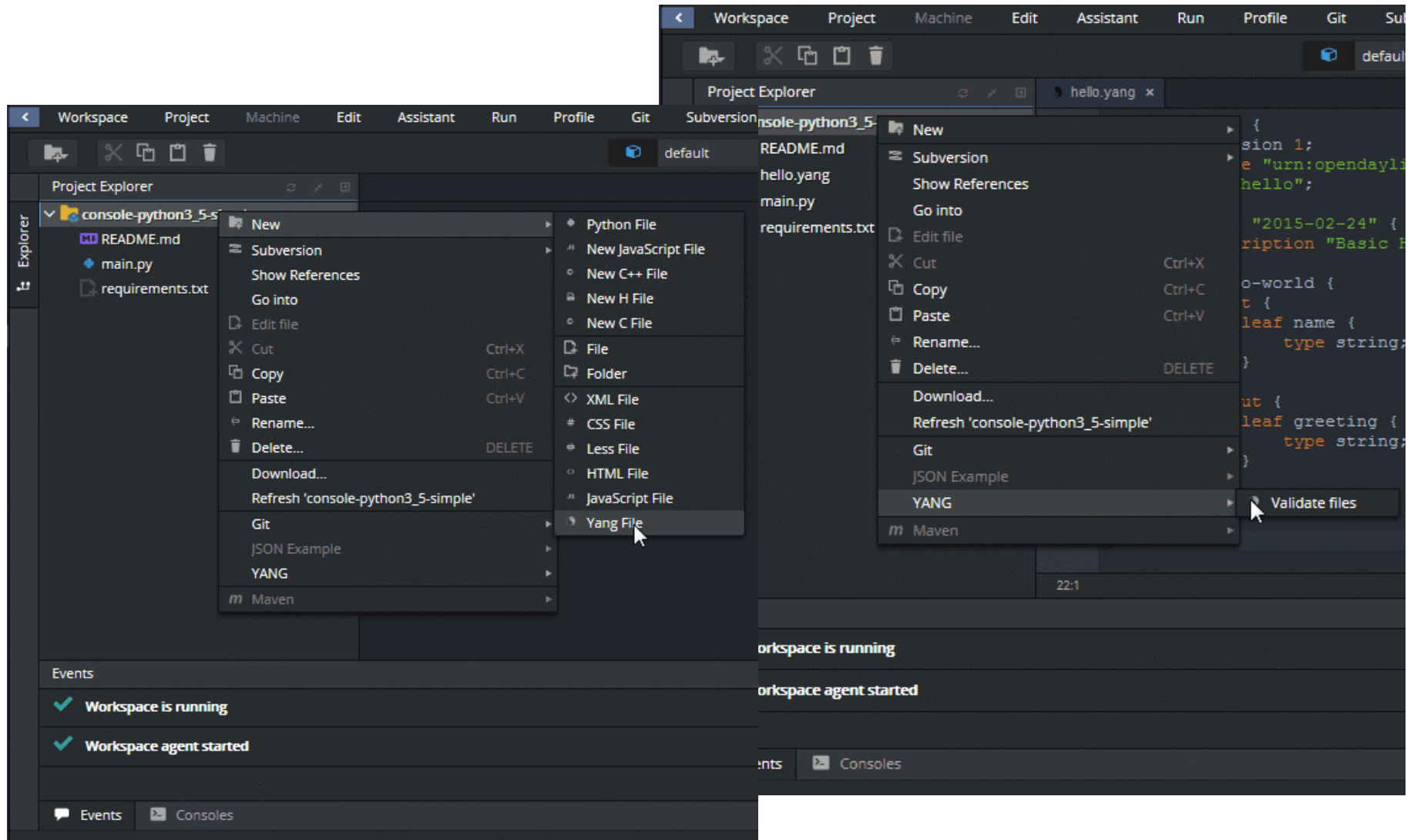


CHE: TECHNOLOGY

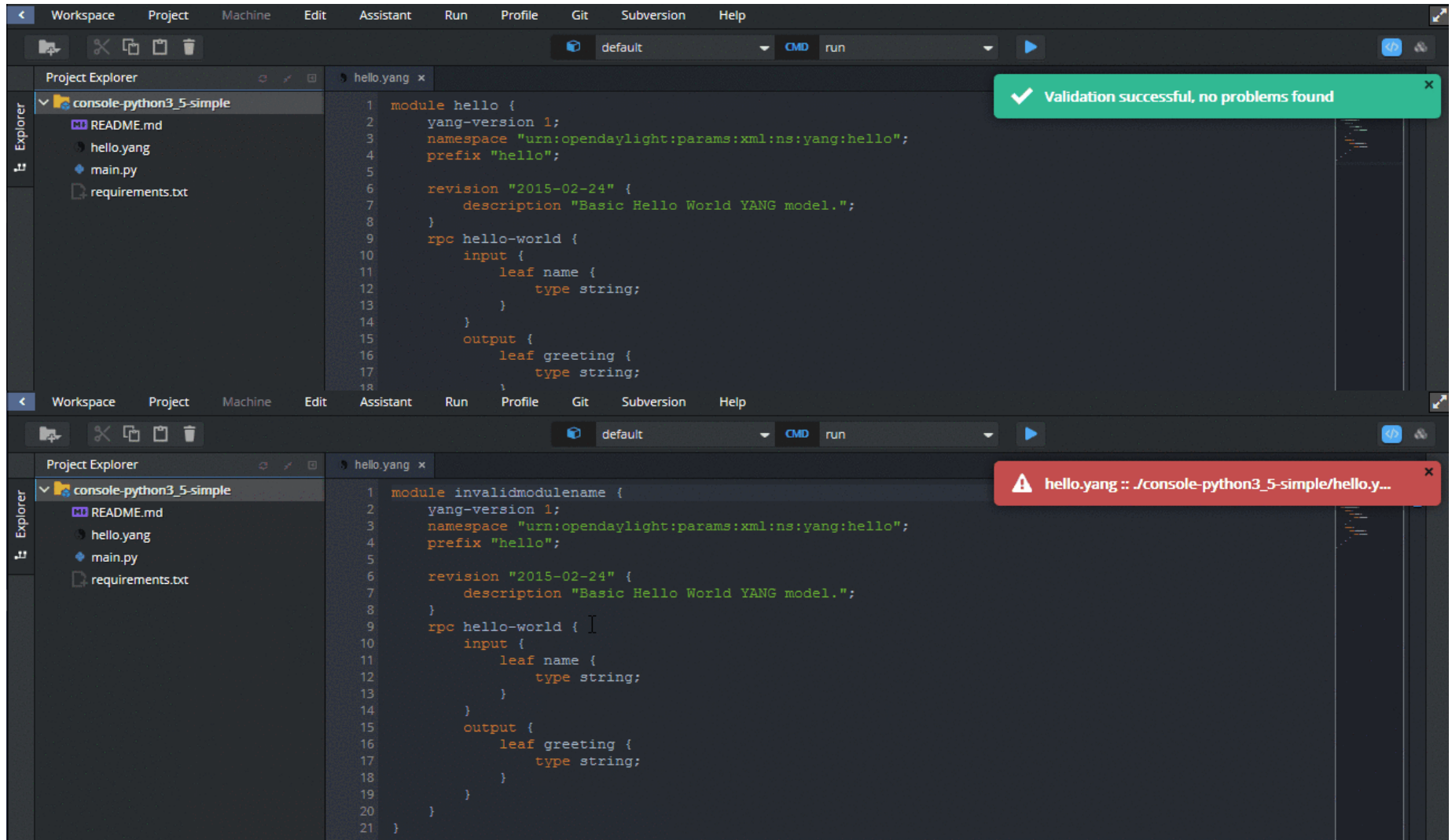


Create the Next Web for Cloud in a Dashboard

CHE: EXTEND MENU



CHE: EXTEND SERVICE



CHE: ISSUES (4.5.1)



- › Plugin development may be costly
- › Documentation is frequently outdated
- › Build problems during development

ECLIPSE CHE SCORE (SO FAR...)



THANK YOU FOR LISTENING!





ERICSSON